

REMARKS

The Office examined claims 1, 3-11, 13-15, 17, 19, 20 & 22-27 and rejected same. With this paper, the claims are variously amended such that the geographical location is determined using distances between the mobile station and the at least two base stations. Claims 3, 4 & 17 are canceled, and four new claims are added so that claims 1, 5-11, 13-15, 19, 20 & 22-31 are pending. The independent claims are 1, 15, 23 & 24. Continued examination is requested.

Claim Objection:

Claim 22 is objected to depending from a cancelled claim. The claim is amended in a manner believed to obviate the examiner's objection.

Claim Rejections, 35 USC 103:

The Office maintains the claim rejections on the grounds of obviousness in light of US 5,974,329 (Wylie) and US Pat. Pub. No. 2002/0050944 (Sheynblat).

Wylie discloses the determination of a location of mobile station in an environment where some of the base stations are line-of-sight with respect to the mobile station and others are non-line-of-sight. It is alleged that a characteristic parameter of the line-of-sight conditions of the radio propagation environment of the base station is determined within Wylie – simply, in line-of-sight (LOS) or not in line-of-sight (NLOS).

The present invention relates to a system for determining the location of a mobile station in a cellular communication system. Each base station of the system includes a characteristic parameter describing line-of-sight conditions for the base station. For example, the characteristic parameter may relate to the locations of buildings within the range of the base station, or the types of buildings, trees, or other radio-path obstructing obstacles. The characteristic parameters are taken into account when determining the location of the mobile station (e.g. by triangulation) to give a more accurate result when the mobile station is in a radio reflective environment.

It is easy to appreciate that Wylie does not provide the full benefit of the present invention in that in the present invention the characteristic parameter describes excess path lengths caused by obstacles in the environment by means of one of a number of discrete levels.

The Office combines Wylie with Sheynblat to allege that Sheynblat discloses characteristic parameters describing excess path lengths caused by obstacles in the environment by means of one of a number of discrete levels.

Sheynblat describes a system for determining the location of a GPS device using GPS satellites when signals from the satellites are affected by radio-path reflections due to the local environment. The GPS device determines its environment by historical usage, stored data, or evaluating attenuation of signals from local base stations.

Applicant respectfully submits that Wylie and Sheynblat could not be combined to render obvious the present invention.

Sheynblat only discloses a single base station having a characteristic parameter. The mobile device of Sheynblat uses the characteristic parameter to determine its location using signals from the GPS satellite.

However, the present invention describes the use in conjunction of multiple base stations each associated with a characteristic parameter to generate the geographical location of the mobile station.

To generate a geographical location of a mobile station from multiple base stations each with characteristic parameters at discrete levels is not a trivial task. The present invention describes solutions to this problem at pages 14 to 20.

Wylie does not disclose the use of characteristic parameters at a number of levels. Wylie only discloses base stations that are line of sight (LOS) or non line of sight (NLOS). It is clear that determining a location of mobile station using binary

characteristic parameters is substantially less complex (as can be seen from the description in Wylie at columns 5 to 7) and produces less accurate results.

It can be seen that Sheynblat does not provide any teaching, suggestion, or motivation for improving Wylie as Sheynblat only contemplates a single characteristic parameter for the location of the mobile device.

Neither Sheynblat nor Wylie provides any disclosure for how the use of multiple characteristic parameters at multiple levels can be used to determine the geographical location of a mobile station.

Neither Sheynblat nor Wylie contemplate the problem of determining the geographical location of a mobile station using base stations where obstacles in the environment cause different path lengths from the base stations to the mobile station and neither Sheynblat nor Wylie provide motivation for solving the problem.

Applicant respectfully submits that Sheynblat and Wylie could not be combined to produce the present invention, and the present invention is thus novel and inventive over the prior art. We submit that all the objections of the examiner have been addressed and we request allowance.

Respectfully submitted,

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